



## The effect of daily weather conditions on myocardial infarction incidence in a subarctic population: The Tromso Study 1974-2004

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### Abstract:

**BACKGROUND:** Meteorological factors like cold temperatures and heavy snowfalls have been reported to increase myocardial infarction (MI) incidence, but there are inconsistencies in results as well as in methodology in previous studies. The objective of this study was to examine the impact of meteorological factors on incidence of MI in a population-based study in Tromso, Norway (69 degrees 39'N). **METHODS:** A total of 32110 participants from the Tromso Study enrolled between 1974 and 2001 were followed throughout 2004. Each incident case of MI was validated by the review of medical records and death certificates. Meteorological data from the Tromso Weather Station were collected from the Norwegian Meteorological Institute database. Poisson regression models were applied to analyse the impact of meteorological factors on MI incidence. All analyses were stratified by sex and age. **RESULTS:** A total of 1882 first-ever MIs were registered. The main finding was an increase in MI incidence among persons older than 65 years with decreasing temperatures (pEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)0.016) and increasing snowfall (pEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)0.030). When comparing the lower and upper limits of the temperature distribution (-10 degrees C with 20 degrees C), the MI risk increased by 47% (RREuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)1.47, 95% CI 1.09 to 2.13). Comparing limits of the snowfall distribution (10 with 0 mm), the MI risk increased by 44% (RREuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)1.44, 95% CI 1.07 to 1.94). **CONCLUSIONS:** In this subarctic population, MI incidence was little affected by the weather, probably due to behavioural protection. However, cold weather and heavy snowfall may be associated with increased risk of MI among older people.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Meteorological Factors, Precipitation, Temperature

**Temperature:** Extreme Cold, Fluctuations

#### Geographic Feature:

# Climate Change and Human Health Literature Portal

resource focuses on specific type of geography

Urban, Other Geographical Feature

**Other Geographical Feature :** subarctic

**Geographic Location:** 

resource focuses on specific location

Non-United States

**Non-United States:** Europe

**European Region/Country:** European Country

**Other European Country :** Norway

**Health Impact:** 

specification of health effect or disease related to climate change exposure

Cardiovascular Effect

**Cardiovascular Effect:** Heart Attack

**Population of Concern:** A focus of content

**Population of Concern:** 

populations at particular risk or vulnerability to climate change impacts

Elderly

**Resource Type:** 

format or standard characteristic of resource

Research Article

**Timescale:** 

time period studied

Time Scale Unspecified